U.S.C. § 103(a) as being unpatentable over Sakamoto in view of Marioni and Miyahara et al. and Zolla; rejected claims 24 and 27 under 35 U.S.C. § 103(a) as being unpatentable over Sakamoto in view of Marioni and Oda et al.; and rejected claim 14 under 35 U.S.C. § 103(a) as being unpatentable over Sakamoto in view of Marioni and Miyahara et al. and Oda et al.

A common basis for all of these rejections lies in a construction of the illustration in Fig. 1B of Sakamoto in which the through hole recited in the claims is the equivalent of the stepped opening in the yoke 4 of Sakamoto which extends for the full length of that yoke. Given this configuration of yoke 4, the Examiner asserts that the shaft 3 in Sakamoto has a short portion fitted in the left end wall of the yoke 4, whereas the remainder of the shaft 3 is spaced from the cup portion of the yoke.

Applicant has amended each of independent claims 1, 23, and 26 to recite the shaft as having a stepped outer surface, and including a first portion fitted in the through hole, and a second portion thinner than and adjacent to the first portion of the shaft that is not in engagement with the inside surface of the through hole. This structure is not disclosed by Sakamoto, nor by any of the other references, and for that reason alone, the several rejections under 35 U.S.C. § 103 no longer apply and should be withdrawn.

As stated on page 1 of Applicants' specification, the present invention concerns "a rotor for a miniature electric motor incorporated in, e.g., an electric clock or watch." The structural organization recited in claim 1, including the toothed wheel on the shaft adjacent to an end of the first portion opposite from the second or thinner portion, as described in the specification at page 8, third full paragraph, is particularly important to this application and is not in any way disclosed in or suggested by any of the prior art

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references of record. Although claims 23 and 26 are drawn to a method, the is equally applicable to the assembly of the recited shaft structure and the annular magnet.

As amended, each of claims 1, 23, and 26 should be allowed. Likewise, claims 2-22, which depend on claim 1, claims 24 and 25, which depend on claim 23, and claims 27 and 28, which depend on claim 26, are allowable by virtue of their dependency.

Applicants respectfully request reconsideration and reexamination of this application and the timely allowance of the pending claims.

If any extension of time under 37 C.F.R. § 1.136 is required for entry of this response, and not accounted for by an attached request and fee payment by check, please grant such extension and charge the required fee to our deposit account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, L.L.P.

Dated: November 15, 2002

By: _____
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Appendix to Amendment
U.S. Application No. 09/673,750
Filed: October 20, 2000

Amended Claims:

1. (Thrice Amended) A rotor for an electric motor, comprising:

a magnet having a rotation axis, said magnet being provided with a through hole having opposite open ends and extending coaxially with said rotation axis;

a shaft fixed concentrically to said magnet, said shaft having a stepped outer surface and including a first portion fitted in said through hole, said first portion having an axial interengagement length from one of said opposite open ends that is in engagement with an inside surface of said through hole and that is shorter than an axial length of said through hole, [and] a second portion thinner than and adjacent to said first portion and that is not in engagement with an inside surface of said through hole, and a toothed wheel adjacent to an end of said first portion opposite from said second portion; and

reinforcing means provided at least inside said through hole for securely fixing said shaft in a predetermined position in said magnet.

23. (Thrice Amended) A method of producing a rotor for an electric motor, comprising the steps of:

forming a coating on at least an inside surface of a through hole of an annular magnet material having a rotation axis, said through hole having opposite open ends and extending coaxially with said rotation axis;

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providing a shaft having a stepped outer surface and including a first portion capable of being fitted in said through hole, a second portion thinner than and adjacent to said first portion, and a toothed wheel adjacent to an end of said first portion opposite from said second portion; and

inserting said first and second portions of said shaft into said through hole of said magnet until an axial interengagement length of said first portion from one of said opposite open ends, shorter than an axial length of said through hole, is engaged in a tightly press-fit manner with said coating while [a] the second portion of said shaft is not in engagement with said coating.

26. (Twice Amended) A method of producing a rotor for an electric motor, comprising the steps of:

providing a magnet having a rotation axis and a through hole with opposite open ends extending coaxially with said rotation axis;

providing a shaft having a stepped outer surface and including a first portion capable of being fitted in said through hole, [and] a second portion axially adjacent to and thinner than said first portion for defining a clearance inside said through hole, and a toothed wheel adjacent to an end of said first portion opposite from said second portion;

inserting said shaft into said through hole of said magnet and fitting said first portion of said shaft in said through hole, until an axial interengagement length of said first portion from one of the opposite ends of the through hole, shorter than an axial length of said through hole, is obtained; and

filling an adhesive in said clearance inside said through hole.

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